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ABSTRACT

Post Traumatic Stress Disorder (PTSD) is a fairly recent inclusion in the literature as a psychiatric disorder. Currently, researchers are trying to relate PTSD to many different environmental and psychosocial stressors including physical abuse, emotional abuse, war trauma, and sexual abuse. This paper addresses research concerning the relationship between sexual abuse and PTSD. Studies indicate that some persons develop symptoms or characteristics of PTSD as a result of their abuse. While many sexually abused children, adolescents, and adults develop PTSD, others exhibit a range of problems including anxiety, depression, externalizing behavior, as well as an increased quantity of diverse psychiatric and physical problems. Therefore, difficulties remain in predicting which persons will development PTSD and the factors other than sexual abuse that affect the disorder. More studies are needed to assess the importance of these factors (e.g., gender of the abuser, number of abusive events, and support or non-support of family members) in the development of post traumatic stress disorder. Contains 68 references. (Author/JBJ)

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THE RELATIONSHIP BETWEEN SEXUAL ABUSE AND POST TRAUMATIC STRESS DISORDER

by

David Allen Lawson

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THE RELATIONSHIP BETWEEN SEXUAL ABUSE AND POST TRAUMATIC STRESS DISORDER

A Doctoral Research Paper

Presented to

the Faculty of the Rosemead School of Psychology

Biola University

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Psychology

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by

David Allen Lawson

May, 1995

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ABSTRACT

THE RELATIONSHIP BETWEEN SEXUAL ABUSE AND
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David Allen Lawson

This paper addresses research concerning the relationship between sexual abuse and Post Traumatic Stress Disorder (PTSD). Studies indicate that some abused persons develop symptoms or characteristics of Post Traumatic Stress Disorder. While many sexually abused children, adolescents, and adults develop Post Traumatic Stress Disorder, others exhibit a range of problems including anxiety, depression, externalizing behavior, as well as an increased quantity of diverse psychiatric and physical problems. Therefore, difficulties remain in predicting which persons will develop Post Traumatic Stress Disorder and the factors other than sexual abuse that affect the disorder. More studies are needed to assess the importance of these factors (e.g., gender of the abuser, number of abusive events, support or non-support of family members) in the development of post traumatic stress disorder.

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THE RELATIONSHIP BETWEEN SEXUAL ABUSE AND POST TRAUMATIC STRESS DISORDER

Introduction

Post Traumatic Stress Disorder (PTSD) is a fairly recent inclusion in the literature as a psychiatric disorder, although it has been recognized as a psychological problem for years. Currently, researchers are trying to relate Post Traumatic Stress Disorder to many different environmental and psychosocial stressors including physical abuse, emotional abuse, war trauma, environmental trauma, and sexual abuse (Breslau, Davis, Andreski, & Peterson, 1991; Bryer, Nelson, Miller, & Krol, 1987; Helzer, Robins, & McEvoy, 1987). Although PTSD has been diagnosed after many forms of trauma including sexual abuse (Bryer et al., 1987), it has been difficult to show that a particular stressor or traumatic event creates Post Traumatic Stress Disorder. In many cases, further confusing researchers, sexual abuse has created other disorders in children and adults including conduct disorder, borderline personality disorder, major depression, and substance abuse. Therefore, researchers are currently studying factors which may affect the development of PTSD. These factors include pre- and post-trauma issues along with familial, age, and developmental differences. These current studies may help explain why a particular trauma creates PTSD in some children and adults, and not in others.

Methodological Considerations

Recent interest in the issues of sexual abuse and Post Traumatic Stress Disorder has encouraged many researchers to theorize and conduct empirical studies related to the subjects. Journals have also been published which specifically deal with issues of abuse and PTSD including Child Abuse and Neglect, and Journal of Traumatic Stress. From this interest there have arisen critiques of the current state of research of childhood sexual abuse and Post Traumatic Stress Disorder. These critiques include underepresentation of men and boys in studies, no standard definition of sexual abuse, numerous types and styles of instruments used to test for PTSD, a limited number of instruments created specifically to test children for PTSD, the use of correlation as a statistical measure, and an inability to control extraneous variables.

Much of this information stems from earlier research relating sexual abuse and PTSD, which focused solely on women and young girls. Very little research was conducted on men or young boys, although research indicated that sexual abuse among males in the general population was approximately 16% (Finkelhor, 1979, 1990). As interest in the subject grew, it became more obvious that men, specifically, had been underrepresented in both the literature and in empirical studies. Finkelhor (1979) stated in his book, Sexually Victimized Children, "our society casts men as sexually active and women as sexually passive, thus attributing more consent and less exploitation to male victims" (p. 48). Society's perception of male victims as less exploited than female victims helps explain why early research focused more on women and young girls. Pierce and Peirce (1985) found that, in their

sample of sexually abused children, 12% of the boys and 3% of the girls were believed to have encouraged their sexual abuse. As it has become evident that males have also been abused, researchers have focused more on the effects sexual abuse has upon them. Many have felt that both researchers and the public were unwilling to accept the fact that boys and men might also be abused.

A second concern is related to the issue that there is no standardized definition of sexual abuse. Most researchers either do not define sexual abuse, or they create a definition based upon their own local, regional, or national interpretation. For example, McLeer, Callaghan, Henry, and Wallen (1994) and McLeer, Deblinger, Henry, and Orvaschel (1992) defined sexual abuse as any sexual touching. However, they did not define what sexual touching included. Deblinger, McLeer, Atkins, Ralphie, and Foa (1989) included sexual touching in their definition and defined it as kissing fondling, or penetration. Fromuth, and Burkhart (1989) defined sexual abuse as any physical or non-physical contact. Their definition included exhibitionism or sexual invitations. Rowan, Foy, Rodriguez, and Ryan (1994) defined sexual abuse loosely as any sexual experience, but did not explain this any further. Neither the Diagnostic and Statistical Manual of Mental Disorders, third edition, revised (DSM III-R; American Psychiatric Association [APA], 1987) nor the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM IV; APA, 1994) have a specific category which defines childhood sexual abuse. Without a standardized definition it becomes difficult to know if researchers are testing or discussing the same problems.

Some researchers are unclear on terms like maltreatment and abuse which are often used synonomously with sexual abuse. Neither is there

consensus on a definition of childhood PTSD. Both the DSM III-R (APA, 1987) and DSM IV (APA, 1994) have definitions for adult PTSD which can be used for children. But researchers must extrapolate these ideas to fit children's needs and situations. Many researchers and practitioners had hoped that the recent DSM IV would include more childhood disorders, specifically PTSD as it relates to childhood sexual abuse. Without the backing of the DSM IV, some researchers feel that children with the disorder may not get the support or help they need, and they may go undiagnosed.

A third concern has to do with the numerous types and styles of instruments used to test for childhood PTSD (Runyan, Everson, Edelsohn, Hunter, & Coulter, 1988). These include interviews, self report forms, and parental checklists. Interviews are conducted by researchers or trained professionals. These are used to screen individuals for psychiatric problems or for diagnostic impressions. Deblinger et al. (1989) used a structured interview, which they developed based on the DSM III-R (APA, 1987). Merry and Andrews (1994) used an unstructured interview which consisted of questions to children concerning their developmental and family history, and sexual abuse. Self report forms are usually filled out by the person participating in the study. The forms ask questions pertaining to specific symptoms associated with a problem, or to an event (PTSD, or sexual abuse). Examples include the Child Depression Inventory (CDI; Kovacs, et al., 1984), and the Beck Depression Inventory (BDI; Beck, 1978). Parent checklists are used to attain information from parents or guardians of persons participating in a study. Most parent checklists are structured and are designed so that parents rate their childrens' behavior on a point scale. Examples include the Child Behavior Checklist-Parent Form (CBCL; Achenbach, 1978), the

Diagnostic Interview Schedule for Children (DISC-2; Shaffer, Fisher, Piarenti, Schwab-Stone, & Wicks, 1989), and the Life Events Inventory (Coddington, 1972).

These types of instruments, however, have become accepted in specific cases during the last few years. They are being used in controlled environment studies and in research in which it would be difficult to use more standardized tests. There is some concern, though, that current knowledge possessed by children and adults may affect the assessment procedure and invalidate both the check-lists and questionnaires. The rise in understanding of sexual abuse on the part of the general public has some researchers concerned that parents and children may inaccurately test positive on self reports because they understand what researchers want. Researchers (Runyan et al., 1988) believe this may decrease the external validity.

A fourth concern is that few instruments have been created to test children specifically for Post Traumatic Stress Disorder. Many of the tests that have been used were created to test for general psychological problems, such as the Child Behavior Checklist- Parent Form (CBCL; Achenbach & Edelbrock, 1983), the Piers-Harris Children's Self Concept Scale (Piers & Harris, 1984), the Children's Depression Inventory (CDI; Kovacs, 1984), and the State-Trait Anxiety Inventory for Children (STAIC; Spielberger, 1973). Since these instruments were created to test for other problems, there is some concern that they may be unable to differentiate PTSD from other disorders. If this is the case, many researchers are concerned that relationships already established in previous research between Post Traumatic Stress Disorder and childhood sexual abuse would be invalidated. Recent instruments, such as the Post Traumatic Stress Module of the Structured Clinical Interview for the

DSM III-R (SCID; Spitzer, Williams, Gibbon, & First, 1989), and the Diagnostic Interview for Children and Adolescents (DICA-6-R; Reich & Welner, 1990) have helped calm the concerns over lack of standardized tests to relate sexual abuse and PTSD. Many of the current research measures, which have been normed and standardized on child sexual abuse victims, have validated much of the previous research.

A fifth concern about earlier research has to do with the nearly exclusive use of correlation as a statistical measure. Correlation is a valid statistical procedure and earlier studies have shown a correlation between sexual abuse and PTSD. However, the study of these two issues has evolved to a point where the existing relationship has been verified by repeated studies. There are many other issues being studied relating sexual abuse to the development of PTSD. The complex nature of the relationship calls for other measures such as Chi square and factor analysis. Newer studies, however, are beginning to use other forms of analysis to verify and add to the results of correlational studies.

The sixth and final concern researchers deal with, and one of the most difficult problems they face, is control of extraneous variables. Because the research is necessarily done in an uncontrolled environment, extraneous variables may affect the outcome of these studies. Chief among these concerns is the fact that much of the research relating sexual abuse and PTSD includes children who have spoken out or have pressed charges against their offenders. Many of these children are under obligation to prosecute the offenders. Researchers are concerned that the process of the medical evaluation used to verify sexual abuse, followed by the corresponding, relatively public courtroom proceedings conducted in front of strangers, are

extraneous variables that may be traumatic enough themselves to create PTSD (Runyan et al., 1988). Without control of these variables, some researchers are concerned that any relationship found between sexual abuse and PTSD may not be completely attributable to the original abusive event itself, but may be at least exacerbated by the courtroom proceedings. Although current research has reviewed the issue of courtroom abuse, no studies have been done with children which adequately control for that variable.

History

To understand the importance of PTSD and its effects on those who manifest it, one must understand the history of the disorder. Post Traumatic Stress Disorder was originally termed shell shock in World War I. In World War II battle fatigue was used to describe the same symptoms. Many researchers felt that shell shock was too specific and did not adequately address the experiences that had created the type of trauma experienced by the veterans. Finally, war neurosis was used during World War II after it was observed that many veterans experienced neurotic symptoms.

During this early period, psychiatrists, physicians, and psychologists noticed that certain veterans experienced a series of problems which appeared to be related, yet different from any other disorder they had observed. They noticed that after certain stressors or traumatic events during the war many veterans experienced a numbness of response. This was accompanied by cognitive or somatic symptoms of irritability, aggressiveness, and depression (Cameron, 1985). Others experienced haunting memories, anxiety, and social withdrawal. The stressor was generally outside the range of normal human

experiences and, in many cases, was perceived as dangerous, whether or not it produced a physical injury (Scrignar, 1984).

Although interest in this new problem was high, it was not until after the Vietnam conflict that Post Traumatic Stress Disorder was studied in detail. During the conflict, psychologists and psychiatrists were able to study the disorder as it occurred. They were able to view the stressors and events that put personnel at greater risk. Interest grew in Post Traumatic Stress Disorder after the Vietnam conflict. As many men and women returned from combat, families noticed problems that were new to the veteran. Families then became interested in the disorder and researchers became interested in the development and treatment thereof.

During the late 1970s and early 1980s, researchers and counselors began seeing people with symptoms similar to Post Traumatic Stress Disorder who had not been in any war or military conflict. At this point, researchers began thinking that other stressful or traumatic events might also create PTSD-like symptoms. The women's movement from the 1970s also played an integral role in the study of a relationship between sexual abuse and PTSD. As the outcry over rape and sexual abuse increased, researchers became more interested in abuse and its effects on women. Particularly, researchers became interested in women who had been raped or physically abused as adults or children. During this period, researchers found that some women who had been abused developed symptoms similar to Post Traumatic Stress Disorder.

As interest grew, it became apparent that other groups who had been traumatized might also experience PTSD. One of the many problems was that few tests had been created to measure such disorders. Also the DSM III-R (APA, 1987) had no specific diagnosis for children, although many children

met the criteria for the adult diagnosis. The DSM III-R description of PTSD is as follows:

> An aversive event has transpired, of sufficient severity that it would evoke significant psychological disturbance in almost anyone. The event is frequently re-experienced via nightmares, intrusive thoughts, or flashbacks (sudden sensory memories that seem immediately real even though the event is long past). The individual experiences a numbing of general responsiveness to, or avoidance of, current events in his or her world. There are persistent symptoms of increased arousal, such as sleep disturbance, heightened startle response, or poor concentration. Also included in this domain is physiologic reactivity upon exposure to events that symbolize or resemble an aspect of the traumatic event. (APA, 1987, pp. 250-251)

The DSM IV (APA, 1994) included the information from the DSM III-R (APA, 1987), and included four notes to the diagnostic criteria specific to the developmental and age specific needs of children These include:

> In children intense fear, helplessness, or horror may be expressed instead by disorganized or agitated behavior. In young children, repetitive play may occur in which themes or aspects of the trauma are expressed. In children, there may be frightening dreams without recognizable content. In young children, trauma-specific reenactment may occur. (pp. 249-250)

These diagnostic criteria may help clinicians diagnose PTSD in children and adolescents.

Traditionally, Post Traumatic Stress Disorder was diagnosed when the above symptoms were manifested by victims of natural catastrophes, disasters, war experiences, or accidents. Currently, the stressful events can fall into one of three categories: natural disasters (e.g., famine, earthquake, and fire); deliberate human acts (e.g., murder, rape, torture); or unintentionally human-caused trauma (e.g., car accidents, plane crashes, collapse of a building due to faulty construction). These can be differentiated from other more common stressors such as divorce, bereavement, or business failure, by their

infrequency, profound intensity and severity, and strong potential for physically harmful consequences (Benner, 1985). In many cases, these events will then trigger a reaction that includes compulsive repetition of varying aspects of the traumatic situation.

After research began on sexual abuse and Post Traumatic Stress Disorder, clinicians began diagnosing victims of interpersonal violence such as rape, physical assault, and child abuse. As interest grew in sexual abuse in childhood, a greater number of reports began to be filed. As more reports were filed, researchers concluded that sexual abuse was a larger problem than anyone had originally imagined. Many researchers now believe that the prevalence of childhood sexual abuse is very high. When sexual abuse is broadly defined, including fondling and intercourse involving children ages 5 - 15, research has found the incidence of victimization to be 20% - 30% for females (Finkelhor, Hotaling, Lewis, & Smith, 1989; Russell, 1986). The reported percentage was lower for males ranging from 10% - 15% (Finkelhor et al., 1989), although many believe this rate underrepresents the correct rate of abuse among males (e.g., Henschel, Briere, Magallanes, & Smiljanich, 1990). As interest in sexual abuse has increased, similar studies have been conducted in other countries. Draijer and Boon (1993), in a national survey of Dutch women, found that 34% had experienced at least one incidence of sexual assault/abuse in their lives. These findings are similar to a study by Russell (1983) in which he surveyed women from the San Francisco community.

Possibly the most distressing of all the symptoms that sexual abuse survivors report are intrusive symptoms. By far the worst of this group are flashbacks. These are sudden intrusive sensory memories that often include

visual images of the abuser's face or aspects of the actual sexual assault taking place, hearing the perpetrators voice making abusive and/or obscene statements, choking sensations related to forced oral intercourse, sometimes accompanied by the taste of semen, smelling the molester's alcohol-laden breath, and feeling hands grabbing one's legs, thighs, or genitals. These flashbacks occur randomly, and many become concerned that they are unable to control the feelings or the memories.

In many cases the memories do have certain triggers that start the flashbacks. The triggers are generally related to the abuse events. Known triggers include, "sexual stimuli or interactions, abusive behavior by other adults, disclosure of one's abuse experiences, or reading or seeing sexual or violent media depictions" (Courtois, 1989, p. 48). Many abused children who experience PTSD also have intrusive, repetitive thoughts. These can be experienced as nightmares, illusions, ruminations, unbidden images, or obsessive ideas. These children also may experience interference in cognition that includes confusion, lack of concentration, over-generalization, and preoccupation. Many also may experience different forms of affect which include guilt, rage, fear, shame, and/or sorrow. The abused also may experience unique gestures, startle reactions, hypervigilence, excessive talking, and listlessness. Autonomic responses may include perspiration, tremulousness, and psychosomatic symptoms (Meiselman, 1990).

These studies reveal that sexual abuse is a larger problem than was previously realized. In addition, the studies reveal that those who are sexually abused as children experience long-lasting and diverse symptoms. Understanding the types of problems associated with the relationship

between sexual abuse and PTSD and the extent to which these problems exist reveal the need for further studies.

Current Literature

There are many important studies going on in the field of PTSD and sexual abuse. Researchers continue to examine the connection between these two in hopes of further understanding the relationship between the them. Other research has focused on factors that may increase the likelihood that children develop PTSD. The current literature will be reviewed and discussed.

Factors Relating to the Development of PTSD

Interest in the issue of sexual abuse as it relates to PTSD has encouraged researchers to study factors involved in the development and treatment of PTSD. These studies deal with sexual abuse and other factors such as gender of the abuser, duration and intensity of the abuse, generational issues, long term effects of PTSD, and age factors.

Sexual abuse and the development of PTSD. In one study, Deblinger et al. (1989) attempted to relate childhood sexual abuse and PTSD. They attempted to find differences among sexually abused and non-abused children, then related these differences to the development of PTSD. The researchers believed that many studies had been conducted on sexually abused children without comparing symptoms associated with sexual abuse to symptoms manifested by the sexually abused and non-abused (Armsworth, 1984; McLeer et al., 1988). The researchers used a retrospective chart review of children from an inpatient hospital unit filled out by medical/psychiatric

staff. This was a unique way of gathering information, and the researchers hoped to control for experimenter bias.

The records of 87 children ages 3 - 13 ($\underline{M}$ = 8.8) were reviewed for the study. The children, 41 girls and 46 boys, had been hospitalized between two to three years before the study began (1985-1986). Their records were reviewed for sexual abuse, physical abuse, and no abuse. Children from similar socioeconomic levels were placed in each of the three groups: sexual abuse, physical abuse, and no abuse. Sexual abuse was defined as victimization of children by an individual at least five years older than themselves and suffered contact abuse (any inappropriate kissing, touching, fondling, or penetration, with or without clothes). They found that 20 children in the sexually abused group had experienced some form of physical abuse in addition to sexual abuse. The researchers developed their own 22-item symptom checklist based upon PTSD criteria from the DSM III-R (APA, 1987). A research assistant, blind to the purpose of the study, reviewed the medical records of all three groups to determine the presence or absence of PTSD symptomatology. Another researcher randomly sampled 25% of all the medical records. An interrater reliability of .96 was found between the two.

Results indicated that 20% of the sexually abused children, 7% of the physically abused children, and 10% of the non-abused children met the full criteria for PTSD. Significant differences were found between the sexually abused group and both the physically and the non-abused groups on re-experiencing PTSD symptoms ($\underline{t}$ = 3.94, $\underline{p}$ < .01, and $\underline{t}$ = 5.46, $\underline{p}$ < .01, respectively). Sexually abused children exhibited significantly more sexually abusive behavior than the non-abused group (Chi square = 5.92, $\underline{p}$ < .01). Sexually abused children also exhibited significantly more sexually

inappropriate behaviors than either the physically abused group (Chi square = 10.37, $p < .001$) or the non-abused group (Chi square = 20.03, $p < .001$). Both sexually abused and physically abused children exhibited more avoidance/dissociative symptoms than non-abused ($t = 1.91$, $p < .06$; $t = 1.81$, $p < .01$). Also, sexually abused and non-abused children exhibited significantly more hyper-arousal symptoms than the physically abused group ($t = 2.27$, $p < .03$; $t = 2.13$, $p < .04$).

Although no significant differences in the development of PTSD among the groups were measured, children who experienced sexual abuse exhibited more sexually inappropriate behaviors than children who experienced no sexual abuse. These results are noteworthy in that sexual abuse may result in symptoms other than PTSD. Results of the research were not conclusive, however, because the groups were not mutually exclusive. Some children who experienced both physical and sexual abuse were placed with the sexually abused group. This made it difficult to confirm whether sexual abuse, physical abuse, or a combination of both sexual and physical abuse caused the development of PTSD. In addition, the study was limited to children who were patients at a psychiatric hospital, which decreased generalizability.

In another study, Merry and Andrews (1994) assessed psychiatric disorders in children who had been sexually abused. The children were recruited from non-psychiatric agencies. Researchers were concerned that previous studies had used sexually abused children who were in psychiatric hospitals. They believed that a study was needed to assess children who had not been hospitalized psychiatrically. They also wanted to test for general psychiatric problems found in children who had been sexually abused and not

just test for a specific diagnosis like PTSD. Recruited for the study were 95 children ages 4 - 16 ($\underline{M}$ = 7.9). The children were recruited from numerous agencies including five department of welfare offices, the police-run sexual abuse interviewing unit for the Auckland, New Zealand area, the protective services of the Auckland Children's Hospital, and area counselors.

Most of the children were of similar ages, cultural background, and socioeconomic status. There were two-thirds as many girls as boys in the original sampling, which changed to five to one as the study progressed. Significantly more boys dropped out of the study, particularly those of a lower socioeconomic status. Sexual abuse was defined by the researchers as

> the involvement of developmentally (i.e., physically, intellectually, and/or emotionally) immature children or adolescents in sexual activities which they do not fully comprehend, to which they are unable to give informed consent or which violate the culturally acceptable taboos of family roles of adult/child relationships. Sexual activity of an exploratory nature between young people or between children or adolescents of a similar developmental level, without the use of force and not involving sexual intercourse in a person under 15 years are not included within the definition of child sexual abuse (Merry & Andrews, 1994, p. 940).

General information and details of the sexual abuse were assessed during the first meeting. Twelve months later the children were reassessed by a psychiatrist using a semi-structured interview. Parents were interviewed using the Diagnostic Interview Schedule for Children (DISC-2; Shaffer, Fisher, Piarenti, Schwab-Stone, & Wicks, 1989) and the parents completed the General Health Questionnaire (GHQ; Goldberg and Institute of Psychiatry, 1981) and the Life Events Inventory (Coddington, 1972). Information was gathered from the children's teachers using the Conners Teacher Questionnaire (Conners, 1969). Based on all of the information gathered, a

score was then assigned by the researchers on the Children's Global Assessment Scale (Shaffer et al., 1985).

A Student's t-test was used on continuous data while Chi square was used on nonparametric data. The children in the study were then compared to the average New Zealand population of 11 year olds. A larger number of boys had higher rates of diagnosis than girls (Chi square = 3.46, $p = .05$). Parents' self report scores were significantly higher for children with a psychiatric diagnosis (two tailed t test, $p < .05$). Both boys and girls in the study had an extremely high rate of PTSD. The rate was 18.2% for both groups.

The significance of this study is the fact that boys in the study had an extremely high rate of PTSD. In previous studies boys usually scored at a significantly lower rate for PTSD than did girls. It should be noted, however, that a significant number of boys dropped out of the study. The boys who dropped out were mostly from lower socioeconomic status. Therefore, boys who completed the study were not as diverse a population as the researchers had originally recruited, and this attrition may have resulted in the unusually high rate of PTSD for boys. The researchers compared the study group ($M = 7.9$) to a control group which consisted of an older population of children ($M = 11$). Age differences make it difficult for researchers to compare the two groups. Results from the study group may be different than the results from the control group due to developmental/age differences. In addition, there can be a problem comparing results of studies when crossing cultures.

In another study, McCleer et al. (1994) compared children who were known to have been sexually abused to a group of children with no history of

sexual abuse. The latter group of children had been diagnosed with other psychiatric problems. The researchers believed that the sexually abused children would have a higher rate of PTSD than would the psychiatric population. They also hypothesized that the psychiatric population would have more diagnosable problems than the sexually abused children. Their hypotheses were based on studies which demonstrated that sexually abused children have fewer problems than do children with other psychiatric problems (Einbender & Friedrich, 1989; Kendall-Tackett & Finkelhor, 1993). The researchers assessed 49 children ages 6 - 16, 26 of whom were recruited for the sexually abused group and 23 who were recruited for the non-sexually-abused group. The mean age for the sexually abused group was 9 and the mean age for the non-sexually-abused group was 10.4. The participants in the sexually abused group were randomly selected from a pool of 92 children referred to the researchers by the Child Sexual Abuse Diagnostic and Treatment Center at the Medical College of Pennsylvania. The psychiatric group was selected from the outpatient department of the Division of Child and Adolescent Psychiatry.

A t-test was used to determine significant differences between the groups in age and gender, and a Mann Whitney U was used to determine differences in income levels, ages, and living standards. No significant differences were found between the two groups. Sexual abuse was defined as sexual touching with or without force by anyone 5 or more years older than the child. The psychiatric group was screened for sexual abuse by researchers prior to the testing using an abbreviated clinical history. The children and their parents then were randomly assigned to trained interviewers and were interviewed separately using the Schedule for Affective Disorders and

Schizophrenia for School-Age Children-Epidemiologic Version (K SADS-E; Orvaschel, Puig-Antich, Chambers, Tabrizi, & Johnson, 1982) which now has a newly developed PTSD section. The interviewers were blind to the expected results of the study. Parents were interviewed first, and children were interviewed second. Group differences were tested using a Chi square, and t-tests were used for continuous variables.

The results indicated that sexually abused children had a significantly greater rate of PTSD than did the psychiatric population, $p < .02$. Although the study attempted to relate PTSD and sexual abuse, Attention Deficit Hyperactivity Disorder (ADHD) was found to be the most common diagnosis. ADHD was found in significant numbers of children in both groups. In addition, a high number of children in both groups had a co-occurrence of both ADHD and PTSD. The second hypothesis of the study, which assumed that the psychiatric/non sexually-abused group would have more diagnosable disorders than the sexually abused group, was not supported. The study revealed no significant difference in the number of diagnosable disorders between the two groups.

The importance of this study is twofold: first, it is important to note that ADHD was more common in abused children than was PTSD. This result does not corroborate other studies which have found PTSD to be the most common problem in abused children. Researchers in this particular study were unable to identify apparent causes for these results. This indicates the need for further studies.

Second, it is important to note that the sexually abused children had as many diagnosable disorders as the psychiatric/non-sexually-abused children. Again, this does not corroborate results of other tests. This points out the

complexity of evaluating sexually abused children with PTSD and other disorders. Therefore, it is an important area for future work by researchers.

In addition, sexual touching was not defined by the researchers. Without a standardized definition of sexual abuse terminology it is difficult to compare studies. Furthermore, it was not clear what the researchers were trying to determine with the parental interviews. The parents' interview was not significant to the study.

Other factors associated with the development of PTSD. McLeer et al. (1992) measured the effects of sexual abuse and its relationship to PTSD. The researchers wanted to design a study that effectively related PTSD to sexual abuse and assess the way other variables affected the development of PTSD in children. In all, 92 sexually abused children were recruited from the Child Sexual Abuse Diagnostic and Treatment Center at the Medical College of Pennsylvania, Department of Human Services, from Women Organized Against Rape, and from private practitioners. The study included 71 girls and 21 boys ages 3 to 16 years (M = 8.9). Sexual abuse was defined as contact abuse involving touching, with or without force, by anyone 5 or more years older than the child. Researchers administered seven different tests to the children and their parent or guardian, including the Child Depression Inventory (CDI), Child Behavior Checklist (CBCL), and the Revised Children's Manifest Anxiety Scale (CMAS-R).

Results indicated that nearly half, 43.9%, of the sexually abused children met full criteria for PTSD and 86.5% met full or partial criteria for PTSD. Father abuse rather than either stranger abuse or mother abuse was found in a majority of children who had developed PTSD (Chi Square = 4.54, $p < .03$; Chi Square = 6.57, $p < .01$). Children with PTSD exhibited significantly

more internalizing($t[16] = -2.61, p < .01$) and externalizing ($t[16] = -2.85, p < .006$) scores on the CBCL than children without PTSD. Sexually abused boys had significantly higher mean scores than all other children tested and sexually abused girls had higher internalizing/externalizing scores on the CBCL than the normal population. Sexually abused children also had high internalizing/externalizing score, which the researchers believed demonstrated a relationship between sexual abuse and PTSD. Therefore, the study supported the hypothesis that sexual abuse is significant in the development of PTSD in children. In addition, the study supported other research which identified fathers as the primary sexual abusers.

The study included more girls than boys. This may accurately represent the ratio of girls to boys who have been abused. However, the smaller number of boys decreases the generalizability of the study. The researchers included the term partial PTSD in their assessment of children. Partial PTSD was never defined and may have been included to further the statistical significance of their study.

In another study Fromuth, and Burkhart (1989) used a retroactive questionnaire to review the psychological and sexual problems manifested by college men sexually abused as children. The researchers believed that previous studies had not focused enough on long term effects of sexual abuse and that the research that had been done did not focus adequately on sexually abused males. The researchers also believed that both boys and girls would have similar long term problems, particularly psychological and sexual. Some previous research has indicated that sexually abused boys do not believe that abuse has any effect on their lives (Fritz, Stoll, & Wagner, 1981) while other research has been unclear on how it has affected them. The

researchers also believed that previous studies of males had not used a reliable definition of abuse or used meaningful, validated measurements, so attempts were made to correct these limitations.

Childhood sexual abuse was defined broadly as any sexual experience that involved either physical or non-physical contact, exhibitionism or sexual invitations. The researchers used college students from the midwestern and southeastern regions of the country. There were 253 women and 329 men included in the study with the mean age of both groups being 20. Both groups were predominantly white and both groups were given credit in their psychology classes for volunteering to be in the study. A questionnaire was given to the subjects which focused primarily on childhood sexual victimization, and sexual and emotional adjustment. The students were then given the Hopkins Symptom Checklist (SCL-90; Derogatis et al., 1973), the Beck Depression Inventory (BDI; Beck, 1978), a Locus of Control Scale (Coleman et al., 1966), a modified version of Rosenburg's Self Esteem Scale and, finally, Finkelhor's Sexual Self-Esteem Scale.

Results indicated that 15% of the midwestern group and 13% of the southeastern met criteria for sexual abuse. A large percentage of the abusers in both samples were female (78% midwestern, 72% southeastern). These results are unusual in that most research indicates that more men than women are abusers. The Hopkins Symptom Checklist (SCL-90; Derogatis, Lipman, & Covi 1973), the Beck Depression Inventory (BDI; Beck, 1978), and a Locus of Control Scale (Coleman et al., 1966) were used to measure symptoms in the two groups. A significant relationship between sexual abuse and psychological problems was found in the midwestern group, but not in the southeastern group. The midwestern group had significantly higher scores

on the Obsessive Compulsive, Interpersonal Sensitivity, Depression, Paranoid Ideation, and Psychoticism scales, as well as the Global Severity Index and the Positive Symptom Distress Index ($p < .05$). An even stronger relationship was found between sexual abuse and psychological problems on both the Hostility scale and the Positive Symptom Total Index ($p < .01$). The researchers believed that a very narrow range of adjustment scores in the southwestern sample made it difficult to find any relationship in the study. However, no relationship was found between sexual abuse and sexual adjustment in either group.

It is important to note that the number of sexually abused males found in the study was similar to what has been found in other studies regarding the number of women sexually abused. Of particular interest in this study is the large number of female abusers (an average of 75%). This is unique because most research indicates that more men than women abuse children and adolescents (McLeer et al., 1992). This could indicate that more females are abusers than research has previously indicated or that the study did not effectively address standard abuse issues. Also, it could indicate that the broad definition of sexual abuse used in this study may have affected the results.

In their attempt to define childhood sexual abuse the researchers included many criteria that resulted in a broad definition of the term. For instance, the researchers used non-contact sexual abuse such as exhibitionism, and sexual invitations in their definition. This is a unique inclusion used by few other researchers. Therefore, it could complicate comparing this study with others. However, the researchers were successful in incorporating validated measurements such as the Hopkins Symptom Checklist (SCL) and the Beck Depression Inventory (BDI) into their study. Although this study

did not directly address the relationship between sexual abuse and PTSD, it is noteworthy because many of the symptoms found to relate positively with the abuse are symptoms found in many people with PTSD.

Rowan et al. (1994) studied 47 adults who were assessed to have been survivors of childhood sexual abuse by their individual therapists in the Los Angeles area. The researchers wanted to relate PTSD to sexual abuse and study how intensity and duration of the abuse affected development. The researchers defined childhood sexual abuse as any type of sexual experience prior to the age of 16 with someone five or more years older than themselves. The researchers recruited white females from low to middle socioeconomic status. Specifically, 44 women and 3 men volunteered for the study. The mean age for the group was 34 with a range of 20 - 51. Of this sample, 81% were Caucasian, 15% were Hispanic, and 4% were Black.

The researchers used a screening instrument to originally test for physical abuse and family violence. Out of the sample, 55% responded positive to questions about physical abuse, and 60% affirmed that they had also been involved in family violence. The researchers wanted to know how many subjects had also been involved in some form of non-domestic violence. The researchers then used the preliminary section of the Vietnam Veterans History Questionnaire (Foy, Sipprelle, Rueger, & Carroll, 1984) to test for PTSD. Wording on this test was altered to include women and childhood experiences. The Structured Clinical Interview for the DSM III-R (SCID), The Impact of Events Scale (IES), and the PTSD Symptom Checklist (SCL) were given to all the participants.

The researchers used a Chi Square test to relate sexual abuse, duration and frequency of sexual abuse, age and different types of exposure to sexual

abuse to PTSD. The results confirmed the relationship of exposure to sexual abuse and the development of PTSD ($p < .03$). Duration and frequency of abuse were also found to be significantly related to the development of PTSD ($p < .05$). No significant relationship was found involving the age at which the abuse occurred to different types of exposure.

This study was significant in that it related the experience, the duration, and the frequency of the sexual abuse to the development of PTSD. This is one of few studies that has been able to demonstrate a relationship between factors such as duration and frequency of sexual abuse and the development of PTSD. The validity of the study is decreased by the fact that the participants experienced abuses other than sexual abuse. The study also used a small sample size which makes it difficult to generalize.

In another study, Famularo (1994) assessed the relationship between PTSD and child maltreatment. The researchers believed that many children who have been mistreated in their homes have a high incidence of PTSD (Deblinger, McLeer, & Henry, 1990; Terr, 1991). They also believed that there is a strong link between intergenerational violence/maltreatment and development of violent/maltreatment tendencies (Green, 1988; Pynoos & Eth, 1984) and that children who had experienced disrupted parenting during the first four years of life were much more likely to develop personality disorders than children who did not have disrupted parenting (Quinten & Rutter, 1985). Therefore, the researchers hypothesized that an abusive/violent family could create PTSD, and that a mother with PTSD would have children with a higher incidence of PTSD.

The researchers recruited 109 women and their children who were in juvenile/family court due to child maltreatment. Children were removed

from the family in each case in which there was clear evidence of child abuse/neglect. A smaller, younger, subset of this group had been previously diagnosed with PTSD. The study reviewed cases in which children ages 5 - 12 had been recently sent to juvenile court and removed from parental custody. Parents of these children were asked to participate in the study. Each child was interviewed by a psychologist, then given the Diagnostic Interview for Children and Adolescents-Revised 6th Version (DICA-6-R). The age at which the abuse began was also evaluated by the researchers. Based upon these results children were placed in either the PTSD or the non-PTSD groups. Each mother was then questioned using a psychiatric interview. Mothers were then given the Post Traumatic Stress Module of the structured Clinical interview for the DSM-III-R (SCID). The diagnosis of PTSD in the mothers was based solely on the SCID responses. Researchers then used Wilcoxen signed rank instruments to examine group differences, such as age at which abuse , age of the abusers, and income. Chi square tests were used to compare began groups by ethnicity. Researchers looked at whether PTSD in mothers predicted the probability of PTSD in their children. Group differences were then analyzed on the basis of this information.

Results indicated there were no significant differences between PTSD mothers and non-PTSD in demographics (race or income). Of significance, however, was the number of mothers with diagnosable PTSD who also had children with PTSD (Chi square = 10.2, $p = .001$). The relationship between mothers with PTSD and children with PTSD may support the researchers' hypothesis that PTSD is intergenerationally influenced.

Children who were diagnosed with PTSD had their maltreatment begin at a significantly early age, a mean of 46.4 months, ($p < .04$). Children

born to mothers without PTSD had a higher mean age at onset of maltreatment (61.6 months, $p < .03$) than did children born to mothers with PTSD.

This study relating PTSD and child maltreatment does not support the hypothesis of the researchers concerning the link between intergenerational violence/maltreatment and development of violent/maltreatment tendencies. It does, however, indicate there is a difference between the onset of maltreatment of children by mothers without PTSD and mothers with PTSD. This unusual result reveals the need for further studies.

Two variables which confounded the study were that child participants had already undergone a courtroom experience that could have been a confounding variable. Also, some of the children had been removed from the abusive homes, again, creating another confounding variable.

In another study, Kiser, Heston, Millsap, and Pruit (1991) wanted to review differences in the development of PTSD in physically abused children and sexually abused children. The researchers believed that enough evidence had been gathered to show a relationship between abuse and the development of PTSD. They believed, however, that there is no one-to-one correspondence and some children develop alternative pathways for dealing with trauma. The researchers studied differences between children who had been abused and did develop PTSD and children who had been abused and did not develop PTSD. In addition, they wanted to see if there are certain abuse factors that predispose abused children to the development of PTSD. Also, they wanted to know if there is an association between family functioning and the development of PTSD.

The children selected for the study (N = 163) had been admitted to and were being treated in an outpatient program for children and adolescents. Of the 163, 89 had been physically and/or sexually abused: 40 had been physically abused, 25 had been sexually abused, and 24 had been physically and sexually abused. The children were placed into two groups, a PTSD group and a no PTSD group (49 and 40, respectively). The children and their guardians were administered five different assessment measures: Child Behavior Checklist (CBCL), Youth Self Report (YSR), Personality Inventory for Children (PIC), the Family Environmental Scale (FES), the Family Adaptability and Cohesion Scales III (FACES III).

Results indicated that mothers of the abused/no PTSD group rated their children as more highly anxious ($F = 5.0$, $df = 1, 49$, $p < .05$) than did mothers of the abused/PTSD group. Clinicians who worked with the groups, however, saw the abused/PTSD group as more anxious (Chi square = 4.25, $df = 1, 89$ $p < .05$). In reviewing scores of the groups, the researchers found that the abused/PTSD group had significantly higher anxiety scores than the abused/no PTSD group (Chi square = 16.36, $df = 1, 163$ $p < .001$). Therefore, the researchers' review agreed with the clinicians' report rather than with the mothers report. Mothers of the abused/no PTSD group rated their children as more depressed than did mothers' of the abused/PTSD group ($F = 4.32$, $df = 1, 89$, $p < .05$). The abused/no PTSD group of girls had significantly higher scores on the hyperactivity scale than did the abused/PTSD group of girls ($F = 7.24$, $df = 1, 7$, $p < .05$).

When searching for two unique types of PTSD, the researchers found that children with ongoing abuse had higher depression scores on the CBCL than did children with single abuse events (Internalizing scale $F = 11.68$, $df =$

1, 33, $p < .01$; depression $F = 7.30$, $df = 1, 33$, $p < .01$), higher somatic scores($F = 8.66$, $df = 1, 33$, $p < .01$), were more hyperactive($F = 3.28$, $df = 1, 33$, $p < .07$) and had a wider range of symptoms overall ($F = 7.59$, $df = 1, 33$, $p < .01$). Of the abused PTSD group, 100% were correctly classified when the researchers used discriminant analysis on seven variables: ongoing versus discrete abuse, somatic complaints, family relations, depression, hyperactivity, achievement, and psychosis.

This as well as other earlier research indicated that mothers tend to either misunderstand their childrens' anxiety and depression levels or misrepresent those levels. This indicates the need for more study concerning parental ability to accurately evaluate and present information concerning their own children using instruments such as checklists. In addition, these results verify other research indicating the existence of two types of PTSD, one type of PTSD in those with ongoing abuse and another type in those with single abuse events.

Duration of the sexual abuse was one factor found to significantly affect the development of PTSD, ($p < .05$). There were five variables in the family functioning scale that significantly decreased the development of PTSD: more cohesiveness ($F = 6.84$, $df = 1, 30$, $p < .05$), less conflict ($F = 6.60$, $df = 1, 30$, $p < .05$), more activity and recreation ($F = 7.97$, $df = 1, 30$, $p < .01$), more organization ($F = 6.04$, $df = 1, 30$, $p < .05$), and family strengths ($F = 5.52$, $df = 1, 25$, $p < .05$).

Children in the study were recruited from counselors from whom they had been receiving counseling. No explanation was given as to the amount of time the children had spent in counseling and whether this might have affected the results of the study. In addition, the researchers were unable to

assess differences in physical and sexual abuse among the children because 24 of the 89 participants had experienced both physical and sexual abuse.

In another study, Mannarino, Cohen, and Benman (1994) assessed pre-abuse factors and different psychological symptoms in sexually abused girls. The researchers believed previous studies had not been conducted which related pre-abuse factors and future psychological symptoms. Girls ages 6 - 12 with a mean age of 9.38 were recruited and tested over a two-year period. The researchers assessed a sexually abused group, clinical control group, and a normal control group. Participants in the sexually abused group were recruited from three local crisis centers for sexual abuse. The average time between the sexual abuse and the referral to the local child protective services was two weeks. Researchers allotted a six month maximum time limit between the reported abuse and the referral. In 22% of the cases, the father/stepfather was the abuser. In 74% of the cases, other extended family members were the abusers. In 4% of the cases, strangers were the abusers.

The clinical control group consisted of 89 referrals from a large urban medical outpatient psychiatric center and exhibited a range of emotional and behavioral problems. The girls were interviewed by the researchers for sexual abuse. Girls with any abuse history were excluded from the study and none were psychotic. The normal control group consisted of 75 girls from a local urban school. The normal control group subjects were chosen for their similarity in demographic characteristics to the sexually abused sample. Racial composition of the three groups was as follows: Caucasians composed 61% of the group, 36% were African-American, and 3% were other.

The normal control group's socioeconomic status was significantly higher than was the socioeconomic status of the other two groups. Many

parents in the clinical control and sexual abuse groups were unemployed. At the time of the original session, all of the subjects were given a full explanation of the experiment. All assessment procedures were administered by Mannarino, Cohen and two other clinicians. The parents, grandparents, or guardians were given the Developmental, Psychiatric, and Medical history (DPM). The researchers used 31 items on the DPM to assess development, 27 items to assess past psychiatric difficulties, 17 items to assess previous medical history, and 25 items to assess previous stressful life events. In addition, the parents were given the Child Behavior Checklist-Parent Form (CBCL). The children were administered the Piers-Harris Self Concept Scale, the Children's Depression Inventory, and the State-Trait Anxiety Inventory for Children.

Results indicated that sexually abused girls were more anxious than both control groups on the State-Trait Anxiety Inventory for Children-Anxiety scale. Abused girls also exhibited significantly more problems than the control groups on the CBCL. The researchers used an analysis of covariance (ANCOVA) on each subscale, with socioeconomic status as the covariate, thereby controlling for that variable. Results indicated that the clinical control group had significantly more prior developmental and psychiatric problems than the sexually abused group ($p < .05$). Moreover, the sexually abused group had significantly more prior developmental and psychiatric problems than the normal control group ($p < .05$). The sexually abused group and clinical control group had significantly more past stressors than did the normal control group. The sexually abused group and the clinical control group did not differ from each other in past stressors.

A Pearson correlation was used to relate the Developmental, Psychiatric, and Medical history subscales of the sexually abused group to the Child Behavior Checklist-Parent Form, Child Depression Inventory, State Trait Anxiety Inventory for Children, and Piers-Harris. Further analysis indicated there was a significant relationship between the Developmental subscale of the Developmental, Psychiatric, and Medical history and all symptom measures. The Psychiatric subscale was related to all but the Child Behavior Checklist-Social Competence Scale. The Past Stressors subscale was significantly related to three Child Behavior Checklist factors, the Child Depression Inventory and the A State scale of the State-Trait Anxiety Inventory for Children. There were no significant relationships found between the Medical subscale and other measures.

These results corroborate other studies that indicate that sexually abused individuals have more anxiety and more problems as indicated by the CBCL. However, the study was gender specific, the socioeconomic status of the normal control group was higher than either of the other groups, and many parents in the clinical control group and the sexually abused group were unemployed. These factors were taken into account by the researchers, however, thereby reducing the confounds thereof.

In another study, Black, Dubowitz, and Harrington (1994) designed a study to measure differences in development and self perception between young children who had been sexually abused and adolescents who had been sexually abused. The researchers hypothesized that children's behavior is influenced by their developmental level and by specific contextual variables. Also, they believed that younger children may be less traumatized at the time of the experience than are older children. They believed that older children

would have developed a stronger, clearer set of boundaries and would be more aware of social and, particularly, sexual taboos (Belsky, 1984; Friedrich, Gramsch, Broughton, Kuiper, & Beike, 1991). Therefore, the researchers assessed two hypotheses concerning differences between younger abused children and older abused children:

> 1. Children suspected of having been sexually abused have more behavior problems as reported by parents, than children with no history of abuse, but that older children exhibit more behavioral problems than younger. 2. That among children suspected of having been sexually abused, older children have lower levels of perceived competence and social acceptance than younger children. (Black et al., 1994, p. 86)

The researchers used two groups of children. One group consisted of 44 children recruited from an inner city university-based clinic that specializes in evaluating children suspected of having been sexually abused. They also chose 41 children from the same socio-economic background, who were not suspected of having been sexually abused, as the control group. This group was chosen from an inner city, pediatric, primary care clinic. From this latter group, 10% of the eligible families refused to participate in the study. Girls outnumbered boys three to one in both groups. A multivariate analysis of variance was used to measure the impact of gender on the outcome of the study. No gender impact was found. Parents or guardians were given the Child Behavior Checklist (CBCL). Children ages 4 - 6 were given the Pictoral Scale of Perceived Competence and Social Acceptance Scale for Young Children. Children 7 and older were given the Perceived Competence Scale for Children. Both scales were similarly normed and scored, and both scales tested for issues of self perception.

Results indicated that children in the sexually abused group had higher rates of internalizing and externalizing than did children in the non-abused group (Chi square = 7.64, $p < .01$; Chi square = 7.66, $p < .01$). A MANOVA was used to compare behavioral problems in the abused and non-abused groups. There were significant differences between the groups ($F = 4.55$, $df = 1, 44$, $p < .02$) and significant differences in behavioral problems according to the ages of the children ($F = 3.14$, $df = 1, 44$, $p < .05$). A MANOVA was used to compare differences in self perception by age within and between the groups. There was a main effect for age ($F = 6.23$, $df = 1, 44$, $p < .001$) as well as a significant group/age interaction ($F = 3.24$, $df = 1, 44$, $p < .03$). Age effects and group interaction by age were significant for both subscales on the self-perception scale. In addition, younger abused children scored significantly higher than did older abused children on the cognitive competence and the social acceptance scales ($p < .05$). These results are consistent with both hypotheses and indicate that developmental issues do appear to affect childrens' self perception. These results are important because they may help determine methods of treatment for sexually abused children of different ages. Further testing is indicated, however, to verify these results.

It is significant to note that 10% of the families from the control group refused to participate in the study. Although those who refused to participate could have affected the study, no explanation was given for their refusal. In addition, the study recruited three times more girls than boys. The researchers were able to illustrate that this ratio of girls to boys did not affect the outcome of the study. Yet, many researchers prefer to recruit equal numbers of boys and girls to generalize the study to both genders. Another possible confound was the fact that different tests were administered to

children of different ages. Although the tests were similarly normed and scored, they may have tested different issues.

In another study Wolfe, Sas, and Werkerle (1994) assessed the relationship between the development of PTSD in children and characteristics of the event and/or the abused children (victims) that might predispose them to its development. The researchers believed that previous studies had attempted to relate specific long and short term psychological functioning to PTSD. In addition, they believed other researchers had reviewed the impact of abuse on children and the adjustments these children made to the abuse (Finkelhor, 1990; Gold, 1986). The researchers concluded, however, that previous studies had not adequately addressed stressors that might predispose children to the development of PTSD.

Therefore, the researchers wanted to assess the impact of sexual abuse on the children and to assess specific stressors within the family and outside the family that might lead to the development of PTSD. The researchers wanted to:

> first, investigate the prevalence of PTSD symptomotology among a sample of sexually abused children, then compare abused children who have met the criteria for PTSD with those who did not. Secondly, we are interested in testing a model that could explain the relative importance of demographic, situational, and psychological factors in the development of PTSD. (Wolfe et al., 1994, p. 39)

The researchers recruited 90 children referred by police or child protective services to the witness preparation program following documentation of sexual abuse. The group consisted of 69 girls and 21 boys ($\underline{M}$ = 12.4 years of age). The researchers began with 221 referrals received for the study. Of these, 147 met the criteria for inclusion in the study. Of the 147, 57 had incomplete records, and 56 of these had no parental consent. The 90

remaining children were administered the Peabody Picture Vocabulary Test - Revised (PPVT-R), and a mean vocabulary IQ of 90.7 was found with a range from 58 to 123. The children were assessed for PTSD-related symptoms with a checklist based upon criteria from the DSM-III-R (APA, 1987). The criteria were modified in word and form to match the developmental level of the children. In addition, the children were administered The Children's Manifest Anxiety Scale-Revised (R-CMAS), Children's Depression Inventory (CDI), Fear Survey Schedule for Children Revised (FCC-R), and The Sexual Abuse Fear Evaluation (SAFE). Parents or guardians were given the Child Behavior Checklist (CBCL) to asses the childrens' behaviors. A Chi square analysis was used to determine the presence of PTSD in sexually abused children.

Results indicated that more female than male children had symptoms of PTSD and female children had more continual abusive experiences lasting more than a year ($p < .05$). Children without PTSD were over 12 years old and non-violent persuasion was used during the abusive situation ($p < .05$). Children with PTSD scored significantly higher on the SAFE, R-CMAS, and the CDI ($p < .006$). In addition, children with PTSD felt guiltier than children without PTSD according to the SAFE ($p < .05$). Also, children without PTSD blamed themselves more than did children with PTSD on the FCC-R ($p < .05$). Multiple regression was used to assess the amount of variance predicted by variables in the study. The variables included IQ, age, gender, and the nature of the abusive experience. These variables controlled for 37% of the variance. Discriminant function analysis was used to accurately predict future PTSD in the abused group 78.38% of the time, which was significant (Chi square[5] = 32.9, $p < .001$).

The results were significant in that they supported previous studies that indicated age, continual abusive experiences, and the method of the abuser (violent or non-violent) influenced the development of PTSD in the victims. The study was inconclusive, however, because researchers were unable to control for a significant amount of the variance. Also, a large number of children who were recruited were unable to participate because of a lack of records, and family consent. In addition, the study included a larger population of girls than boys.

Burton, Foy, Bwanausi, Johnson, and Moore, (1994) assessed the effects of exposure to traumatic events on male juvenile offenders. The researchers believed boys, particularly gang members from the inner city, had been underrepresented in studies of the effects of traumatic events and the development of PTSD. They believed that exposure to traumatic events along with family dysfunction could lead to the development of PTSD. They tested 91 male juvenile offenders ages 13 to 18 ($\underline{M}$ = 16) for symptoms of PTSD and for family dysfunction. Of the 91 adolescents, 74 were members of a gang with 51 reporting they spent time daily with their gang. Traumatic exposure was defined broadly as the experience of personal violence, witnessing violence, death of a family member or friend, experiencing traffic accidents, and/or sexual abuse. The researchers assessed the boys for PTSD and divided them into a PTSD group and a non-PTSD group. Then the researchers assessed differences in family history, exposure to trauma and/or sexual abuse between the groups. The researchers used questionnaires to gather information about the adolescents' experiences including a self report, a personal information questionnaire, The Family Relation Index, and the Symptom Checklist.

Results indicated that a significant number of boys in the study had developed PTSD ($p < .04$). Results also indicated there was a relationship between PTSD and trauma. In particular, there was an indication that different types of traumatic exposure significantly affected the development of PTSD, including general trauma ($r = -.29$, $p < .001$) and the Family Relationship Index total score ($r = -.41$, $p < .001$). Separation or divorce within the family significantly affected the development of both partial full PTSD symptoms ($p < .05$).

This study reinforces the results of other studies that illustrate the significance of non-abuse factors such as family relationships and separation/divorce to the development of PTSD. This study was limited in that it was gender specific and recruited participants from a particular socioeconomic group, specifically adolescents from the inner city. Also, the study used a broad definition of abuse which included sexual abuse as well as many other forms of abuse. Therefore, it may be difficult to generalize results of this study to sexual abuse cases. In addition, the researchers used the term partial PTSD without having previously defined the term.

Long term effects of PTSD. Oates, O'Toole, Lynch, Stern, and Cooney, (1994) wanted to assess psychiatric changes in sexually abused children over an extended period of 18 months. They wanted to review changes in behavior, self esteem, and depression levels that occurred in the abused children. Behavior problems, low self esteem, depression, and other problems also are experienced by children with PTSD. The researchers believed that other studies had not adequately tested for changes over time in abused children. They believed that pre- and post-test scores could help them gain insight into changes in behavior, self esteem, and depression.

A group of 64 children were recruited from local agencies to participate in the study. The researchers decided to recruit a control group of children to follow over time for comparative scores. Initially, both the control group and the abused group were interviewed by a psychologist and a social worker. Both groups were again interviewed in an 18 month follow-up study. The mean time between the first and second interviews was 19.9 months for the abused group and 18.8 months for the control group.

Self-esteem was measured using the pictoral scale of Perceived Confidence and Social Acceptance for Young Children (Harter & Pike, 1994) for children under 7 years of age. The McDaniel Piers Young Children's Self Concept Scale (McDaniel & Piers, 1973) was administered to children ages 7 to 9. The Piers Harris Self Concept Scale (Piers & Harris, 1984) was administered to children 10 and older. The researchers believed these three instruments assessed similar issues from the same theoretical framework. Depression was measured using the Children's Depression Inventory. Behavior was assessed using the Child Behavior Checklist (CBCL) (Achenbach & Edelbrock, 1983). Guardians of the children were assessed using the McMaster Family Assessment Device (Epstein, Baldwin, & Bishop, 1993), the General Health Questionnaire (GHQ; Goldberg, 1978), the Indices of Coping Responses (Billings, Cronkite, & Moos, 1983), and the Newcastle Child and Family Recent Life Events Schedule (Goodyer, Kolvin, & Gatzinas, 1985). Many of the parents' checklists were used to assess changes in living conditions or stressful life problems that might have occurred during the 18 months between interviews.

Results of the measurements indicated there were no significant differences between the control group and the abused group based on age,

socioeconomic status, and child functioning. Of the children who did not wish to be included in the second interview, many had experienced multiple changes in caretakers (Chi square = 8.28, df = 2, p > .001) or were children living with extended families, in foster care, or in institutions. Further results indicated that many of the sexually abused children exhibited fewer behavioral problems over time ($F[1, 167] = 4.42; p < .05$). Although a significant number of sexually abused children did appear to get better over time, a few did not.

Some of the factors involved in producing more positive scores by the children on the assessment instruments include an increase in family functioning, an increase in positive child behavior over time ($F[1, 64] = 3.88; p < .01$), and an increase in the problem solving ability of the family ($F[1, 64] = 4.88; p < .01$). Children from both groups who experienced long term negative events showed a deterioration in self esteem when compared to those who did not experience long term negative events ($F[1, 64] = 6.21; p < .001$). One of the more important findings indicated that mothers who used avoidance coping strategies may have significantly increased the deterioration in their own children's behavior ($F[1, 64] = 2.65; p < .05$). This information corroborates other research in which results indicated that parental influence seemed to promote the development of PTSD in children.

However, since the study used different tests for different age groups, they may have assessed different issues. Also, researchers did not clarify whether children were administered different tests as the study progressed and children moved into higher age groups. Certain children dropped out during the course of the study. The researchers did not explain reasons for the dropouts and the effects this may have had on the results of the study.

The studies reviewed in this section do indicate a relationship between factors such as duration of the abuse, gender of the abuser, and generational issues and the development of PTSD. However, researchers are unable to consistently predict the development of PTSD in children and adults and more emphasis needs to be placed on studying these factors.

Treatment studies. Deblinger et al. (1990) wanted to assess the effectiveness of cognitive behavioral treatment on sexually abused girls experiencing PTSD. The researchers believed this study was needed due to the lack of carefully designed and controlled treatment outcome studies using standardized measures and/or behavioral observations. Previous studies consisted mainly of descriptions of the treatment, clinical anecdotes, and case studies. Therefore, the researchers designed their study to evaluate the effectiveness of the cognitive behavioral model presented and to identify variables that might affect the outcome of treatment. They recruited 19 girls ages 3 - 16, from the Child Sexual Abuse Diagnostic and Treatment Center at the Medical College of Pennsylvania for the study. The mean age was 7.79 years. All of the children had experienced contact sexual abuse. Contact sexual abuse was defined as sexual touching, with or without force, by anyone at least five years older than the child.

The children and the parent or guardian of each child were interviewed to obtain both general and specific abuse information. The Child Behavior Checklist (CBCL), the Child Depression Inventory (CDI), and the State-Trait Anxiety Inventory (STAIC) were given to both the children and their guardians. Children were placed in 12 sessions of individual counseling and the guardians were placed in a supportive, cognitive behavioral class. The counselors for both the children and their guardians used three

standardized steps of behavioral interventions. The 12 sessions consisted of 2 sessions for introduction and termination, 2 sessions for modeling and coping skills training, 6 sessions of gradual exposure to abuse related memories, and 2 sessions of education and prevention training. Paired t-tests were used to assess pre- and post-test scores on all measures.

Results indicated that overall symptoms for each of the 19 children improved. Significant improvements were found on the PTSD scales including re-experiencing the phenomenon ($t = 9.85$, $df = 1, 19$, $p < .001$), avoidance behavior ($t = 10.98$, $df = 1, 19$, $p < .001$), and arousal symptoms ($t = 5.55$, $df = 1, 19$, $p < .001$). Although not all PTSD symptoms were alleviated, none of the children met full diagnostic criteria for PTSD after the treatments. Of significance was the fact that scores on both the internalizing and externalizing subscales of the CBCL improved ($t = 3.31$, $df = 1, 19$, $p < .004$; $t = 5.06$, $df = 1, 19$, $p < .001$). There were decreases in the children's self-reported depression scores ($t = 3.03$, $df = 1, 19$, $p < .05$), state anxiety scores ($t = 4.84$, $df = 1, 19$, $p < .001$), and trait anxiety scores ($t = 2.35$, $df = 1, 19$, $p < .05$). No significant differences in scores were found in different age groups in relationship to the abuser, in time since the last abusive episode, or in duration and nature of the abuse.

These findings indicate that a short term model using cognitive behavioral techniques can be effective in dealing with child sexual abuse victims who have PTSD. Significant improvements on all test scores is extremely promising. However, the study recruited only females thereby limiting generalizability to girls only. In addition, the subjects for the study were limited to 19 girls, thereby decreasing its power. Future research should

focus on recruiting both genders and studying different techniques to test the effectiveness of different styles of therapy.

Biological Factors

Although many studies have related PTSD and other psychological problems to sexual abuse, there is current interest in the relationship between biological problems and sexual abuse. In a recent study, De Bellis, Lefter, Penelope, and Putnum (1994) assessed the effects of catecholamine excretion in a group of sexually abused young girls. In particular, the researchers studied concentrations of epinephrine, norepinephrine, and dopamine, which have been found in previous research to produce numerous psychological problems in laboratory animals. These metabolites have been associated with psychological symptoms, particularly PTSD, in Vietnam veterans. The researchers studied similarities between catecholamine levels in sexually abused females and Vietnam veterans with PTSD. The researchers recruited 20 abused girls and 22 non-abused control girls, ages 8 to 15, of similar demographic and socio-economic status. The researchers used urine samples to test for catecholamine levels.

Results indicated that girls who had been abused had significantly higher levels of catecholamines than did the non-abused girls. In addition, researchers found higher levels of epinephrine, norepinephrine, and dopamine. One sexually abused girl who was also diagnosed with PTSD had significantly higher overall levels of catecholamines than did other girls in the study. The results of this study, particularly for the sexually abused girl with PTSD, are very similar to other results that tested catecholamine levels in Vietnam veterans with PTSD (Charney, Deutch, Krystal, Southwich, & Davis, 1993) thereby demonstrating similar biological problems. It further

supports the relationship between children's symptomatology and adult symptomatology in those who have experienced traumatic events.

The study was gender specific, thereby limiting generalizability. In addition, the researchers compared girls ages 8 - 15 to Vietnam veterans. Also, only one girl recruited for the study had been previously diagnosed with PTSD whereas all veterans in the study had been so diagnosed.

Jensen, Pease, Bensel, and Garfinkel (1991) measured differences in growth hormones among sexually abused, physically abused, psychiatric control, and normal control boys. They recruited 74 boys, ages 6 to 18, from an outpatient, psychiatric clinic. The researchers believed abuse might cause physical problems in boys. They were particularly interested in irregular growth hormone patterns. The researchers introduced two antagonists known to affect the production of growth hormones in children and adolescents. Levels of growth hormone responses were measured through blood levels taken from the children's dorsal hand or forearm vein.

Results indicated that abused children had significantly different growth hormone responses than the control groups. The sexually abused boys had significantly higher responses to the antagonists ($p < .05$) while the physically abused boys had almost the opposite response. These results indicate that different types of abuse may produce different biological responses in the abused children. This is noteworthy in that it points to the need for studies that would result in specific treatment programs for specific types of abuses. The study, however, did not specify how many participants were assigned to each group. In addition, only boys were recruited for the study, decreasing generalizability and making it gender specific. The large age

range for boys (8 - 18) made it difficult for researchers to assess similar developmental issues.

Conclusion

McLeer et al. (1992) indicated that nearly half of sexually abused children met full or partial criteria for PTSD. Also, the Rowan et al. (1994) study along with other studies confirmed the relationship between exposure to sexual abuse and the development of PTSD. Other studies found that children with ongoing abuse had higher depression scores on the CBCL than children with single abuse events. These and other studies confirmed the relationship between sexual abuse and many types of disorders. What the studies do not explain is why some sexually abused children and adults develop PTSD and others do not, and why some develop other disorders such as ADHD.

More recently, research is focusing on the relationship between sexual abuse and biological problems (Charney et al., 1993; Jensen et al., 1991). These studies have further confirmed the relationship between children's symptomology and adult symptomology in those with PTSD. These studies further indicate how significantly a child's life can be affected by abuse. Not only do children experience psychological scars when abuse occurs, they also experience physical and biological effects as well, as indicated by the research reviewed. With interest growing in physical problems that children experience from abuse, there is hope that a more holistic approach may be taken toward children who suffer both psychologically and physically.

Studies indicate that age at the time of abuse and other factors such as number of abusive events, duration of abuse, type of abuse, gender of the

abuser, and support (or lack of support) of family members are significant to the development of PTSD and other disorders (Black et al., 1994; Famularo, Fenton, Kinsherff, Ayoub, & Barnum, 1994; Kiser et al., 1991; Mannarino et al., 1993;). The results of these studies may indicate that the development of PTSD is affected as much or more by other factors as it is by sexual abuse. If the development of PTSD is, in fact, affected by factors other than abuse, researchers need to place more emphasis on the study of those factors.

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